HTL LAB SOLUTIONS

HTL LIQUID HANDLING CATALOGUE

WWW.HTL.COM.PL

PZ HTL S.A. is a modern and dynamically growing enterprise which is part of an international group. We have our own construction and technology department and an experienced, highly-qualified personnel. We use established production and management standards to deliver products of the highest quality to the global market. Throughout all manufacturing stages, we use well-tested quality control systems. Every product has a unique number to enable its full identification. Individual parameters for each pipette are provided on the certificate attached to the product. All devices made by HTL are developed and manufactured in compliance with European Union standards and directives.

PZ HTL S.A. has a certified Quality Management system, compliant with ISO 9001:2008 for designing, manufacturing and selling laboratory products. DEKRA Certification, part of the international DEKRA AG concern is the certifying authority. HTL products, through an excellently organized sales network, reach over 145 distributors in 80 countries worldwide. In Poland, our home market, we have a countrywide distributor network.

CE Declaration of Conformity

Device name:
SWIFTPET PRO
Cat. no.: 0390

Device type:
Manual dispenser

Relevant EC directives/standards:
Directive 2004/108/EC
EN 61326-1:2013
EN 61010-1:2001

21.05.2014

RoHS Declaration of Conformity

Device name:
SWIFTPET PRO
Cat. no.: 0390

Device type:
Manual dispenser

Relevant EC directives/standards:
2011/65/EU (ROHS)
1907/2006 (REACH)

CERTIFICATE

HTL LAB SOLUTIONS

ISO 9001:2008

PZ HTL S.A.

Designing, production, sales and service of liquid handling equipment and accessories

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DEKRA

IAF

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Our company puts a major emphasis on issues related to environmental protection. The major tenet of the HTL environmental policy is to make its operations environmentally friendly. We meet our commitment by complying with the applicable legal provisions in force and environmental protection standards as well as by meeting the rules of conduct set in the corporate policy. Regularly conducted environmental audits are aimed to identify potential threats and incompliances and to take corrective measures. On-going monitoring is provided to implement pro-environment measures in new areas and to improve Environmental Management System.

CERTIFICATE

HTL LAB SOLUTIONS

ISO 14001:2004

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A wide range of Liquid Handling products available in the HTL portfolio addresses the changing expectations of Our Customers who highly value safety, working comfort and reliability offered by HTL products. Thanks to over 30 years of experience, cutting edge technologies used in the manufacturing process and to the whole team's commitment, we manufacture products of the highest quality.

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Serological pipettes

MINILAB 201 repetitive dispenser & syringes

HTL MINI CENTRIFUGE compact laboratory centrifuge

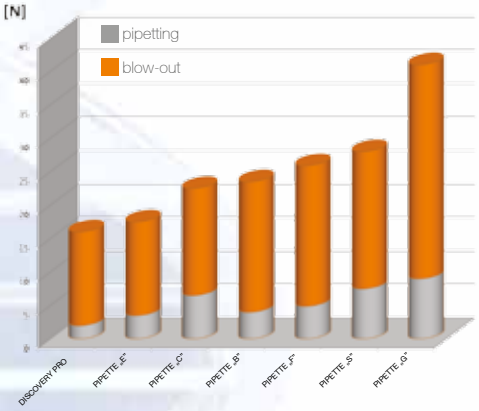
DISCOVERY PRO pipette series

DISCOVERY PRO pipette series is uniquely dedicated to three key features: ergonomics, accuracy and precision. Lightweight construction, contoured shape of the handle and finger-hook guarantee correct grip reducing wrist strain and fatigue (RSI). The tip ejection force is reduced by more than 30%, in comparison with traditional pipette construction, thanks to the unique pushbutton-lever system.

Modern design & innovative construction guarantee thermal insulation of internal parts

- Eliminates the risk of heat transfer to the inner mechanism of the pipette
- Improves accuracy

Ultra low pipetting forces



- 4-digit counter remains visible during work
- Clear & easy to read numbers
- Very fast counter rewinding

Quality according to GLP standards

- Volume setting lock
- Colour coding

The use of the highest quality grade materials guarantees the best chemical and mechanical resistance possible and enables sterilization under UV light and by autoclaving.
Due to universal shafts and long ejector stroke DISCOVERY PRO pipettes are compatible with virtually all brands of tips.

DISCOVERY PRO pipette series brings ergonomics to the highest level. Comfortable pipetting and ejector pushbuttons, well-shaped handle and finger rest guarantee correct grip and “soft” spring system reduces wrist strain and fatigue.

Accuracy and precision according to ISO 8655.
Each pipette is individually calibrated and issued with a quality certificate.

Model	Cat. no.	Colour code	Volume (µl)	A (%)	P (%)	Fit to tips
DP2*	6001		0.2 1.0 Max 2.0	± 12.0 ± 2.7 ± 1.5	± 6.0 ± 1.3 ± 0.7	10 µl
DP10	6002		Min 0.5 5.0 Max 10.0	± 4.0 ± 1.0 ± 0.5	± 2.8 ± 0.6 ± 0.4	
DP20	6003		Min 2 10 Max 20	± 3.0 ± 1.0 ± 0.8	± 1.5 ± 0.5 ± 0.3	200 µl
DP100	6004		Min 10 50 Max 100	± 1.6 ± 0.8 ± 0.8	± 0.8 ± 0.24 ± 0.2	
DP200	6005		Min 20 100 Max 200	± 1.2 ± 0.8 ± 0.6	± 0.6 ± 0.25 ± 0.2	
DP1000	6006		Min 100 500 Max 1000	± 1.6 ± 0.7 ± 0.6	± 0.4 ± 0.2 ± 0.15	1000 µl

*DP2 – minimum volume is 0.1 µl.

Model	Cat. no.	Colour code	Volume (µl)	A (%)	P (%)	Fit to tips
DP8-10 DP12-10	4951 4955		Min 1 5 Max 10	± 8.0 ± 4.0 ± 2.0	± 6.0 ± 2.0 ± 1.2	10 µl
DP8-50 DP12-50	4952 4956		Min 5 25 Max 50	± 4.0 ± 3.0 ± 1.6	± 2.5 ± 1.2 ± 0.6	200 µl
DP8-200 DP12-200	4953 4957		Min 20 100 Max 200	± 3.0 ± 1.5 ± 1.0	± 1.5 ± 0.8 ± 0.6	
DP8-300 DP12-300	4954 4958		Min 50 150 Max 300	± 1.6 ± 1.2 ± 1.0	± 1.5 ± 1.0 ± 0.6	300 µl

Starter DISCOVERY PRO 4 pack

Economy set of 4 pipettes and accessories.

Product	Cat. no.	Model	Accessories
DISCOVERY PRO STARTER 4 PACK	7903	DP10 DP20 DP200 DP1000	Plexi 4-position stand Tips 10 µl, 96 pcs Tips 200 µl, 96 pcs Tips 1200 µl, 96 pcs Calibration tool x 4 Pipette hanger x 4 Instruction manuals

Intuitive way of the user calibration

Lock the volume setting knob. Remove the colour cap using the calibration key. Set the calibration switch in its upper „CAL" position.

Insert the calibration key into the ejector orifice. Turn the key so as the volume indicated by the counter is equal to the average calculated volume. Refer to the user manual for details.

Remove the calibration key and set the calibration switch in its lower position. Place the cap on the ejector button.

5480

Plexi 4-position stand

5449

Multiple stand

5479

Plexi 1-position stand

19483

Pipette hanger

MULTICHANNEL PIPETTES

Multichannel DISCOVERY PRO pipette version provides all the benefits of the single channel pipette and more. Light weight, contoured shape of the handle, excellent accuracy and precision combined with revolutionary multichannel manifold set the new standard of working with micro plates. The pipettes available in a wide range of volumes in 8- & 12-channel version, make the daily life in many laboratories easier.

- 4-digit counter
- Low pipetting forces eliminating fatigue and improving test results
- Highest accuracy & precision
- Robust design
- User friendly calibration system
- Sequential tip ejector – tip ejection with minimum effort
- 360° rotating manifold for optimal working comfort
- Tip loading mechanism for perfect tip sealing

DISCOVERY COMFORTpipette series

DISCOVERY COMFORT pipettes combine the highest level of accuracy and precision with traditional design to make the pipetting experience comfortable and safe. The pipettes are available in single and multichannel version.

- Low pipetting forces and ergonomic design prevent RSI
- Smooth volume setting with volume locking
- Colour coding
- Excellent precision in long pipetting series

- Robust design
- Perfect tip sealing with minimum effort
- UV resistant & fully autoclavable
- 5 & 10 ml shafts protected by filter

Easy disassembling & adjustment of the tip ejector

- Sequential tip ejector – tip ejection with minimum effort
- 360° rotating manifold for optimal working comfort
- Tip loading mechanism for perfect tip sealing

Easy user calibration

Remove the pushbutton set.

Insert the calibration key and locate in the key slots. The calibration key is delivered with the pipette.

Turn the key to increase or decrease the display volume. Refer to the user manual for details.

Replace the pushbutton set. The procedure completed.

DV – grey shaft

D – colour shaft

DV8 – 8 channels

DV12 – 12 channels

Model	Cat. no.	Colour code	Volume (µl)	A (%)	P (%)	Fit to tips
DV2* D2	4041 4051	●	0.2 1.0 Max 2.0	± 12.0 ± 2.7 ± 1.5	± 6.0 ± 1.3 ± 0.7	10 µl
DV10 D10	4042 4052	●	Min 0.5 5.0 Max 10.0	± 4.0 ± 1.0 ± 0.5	± 2.8 ± 0.6 ± 0.4	
DV20 D20	4043 4053	●	Min 2 10 Max 20	± 3.0 ± 1.0 ± 0.8	± 1.5 ± 0.5 ± 0.3	200 µl
DV50 D50	4047 4057	●	Min 5 25 Max 50	± 2.5 ± 1.0 ± 0.8	± 2.0 ± 0.6 ± 0.4	
DV100 D100	4044 4054	●	Min 10 50 Max 100	± 1.6 ± 0.8 ± 0.8	± 0.8 ± 0.24 ± 0.2	
DV200 D200	4045 4055	●	Min 20 100 Max 200	± 1.2 ± 0.8 ± 0.6	± 0.6 ± 0.25 ± 0.2	
DV250 D250	4040 4050	●	Min 50 125 Max 250	± 1.0 ± 0.8 ± 0.6	± 0.4 ± 0.3 ± 0.3	300 µl
DV1000 D1000	4046 4056	●	Min 100 500 Max 1000	± 1.6 ± 0.7 ± 0.6	± 0.4 ± 0.2 ± 0.15	1000 µl
DV5000 D5000	4048 4058	○	Min 500 2500 Max 5000	± 1.2 ± 0.6 ± 0.5	± 0.5 ± 0.2 ± 0.15	5000 µl
DV10000 D10000	4049 4059	○	Min 1000 5000 Max 10000	± 2.5 ± 0.8 ± 0.5	± 0.6 ± 0.3 ± 0.2	10000 µl

* DV/D2 – minimum volume is 0.1 µl.

Model	Cat. no.	Colour code	Volume (µl)	A (%)	P (%)	Fit to tips
DV8-10 DV12-10	5121 5125	●	Min 1 5 Max 10	± 8.0 ± 4.0 ± 2.0	± 6.0 ± 2.0 ± 1.2	10 µl
DV8-50 DV12-50	5122 5126	●	Min 5 25 Max 50	± 4.0 ± 3.0 ± 1.6	± 2.5 ± 1.2 ± 0.6	200 µl
DV8-200 DV12-200	5123 5127	●	Min 20 100 Max 200	± 3.0 ± 1.5 ± 1.0	± 1.5 ± 0.8 ± 0.6	
DV8-300 DV12-300	5124 5128	●	Min 50 150 Max 300	± 1.6 ± 1.2 ± 1.0	± 1.5 ± 1.0 ± 0.6	300 µl

5484 Carousel stand

5449 Multiple stand

5480 Plexi 4-position stand

5479 Plexi 1-position stand

DISCOVERY COMFORT starter sets

Economy set of 3 or 4 pipettes and accessories.

Product	Cat. no.	Model	Accessories
DISCOVERY Comfort STARTER 4 PACK	7901	DV10 DV20 DV200 DV1000	Plexi 4-position stand Tips 10 µl, 96 pcs Tips 200 µl, 96 pcs Tips 1200 µl, 96 pcs Calibration tool x 4 Pipette hanger x 4 Instruction manuals
	7904	D10 D20 D200 D1000	
DISCOVERY STARTER KIT	7924	DV20 DV200 DV1000	Tips 200 µl, 96 pcs Tips 1200 µl, 96 pcs Calibration tool x 3 Pipette hanger x 3 Instruction manuals
	7926	D20 D200 D1000	
DISCOVERY STARTER KIT BIO	7923	DV10 DV100 DV1000	Tips 10 µl, 96 pcs Tips 200 µl, 96 pcs Tips 1200 µl, 96 pcs Calibration tool x 3 Pipette hanger x 3 Instruction manuals
	7925	D10 D100 D1000	

LABMATE PRO pipette series

The LABMATE PRO pipette family offers a wide variety of volume models for different laboratory applications. Its durable, UV resistant and autoclavable body is coupled with high accuracy and precision performance to ensure many years of reliable service in laboratories all over the world.

- Contoured shape of the handle and light weight
- Proven accuracy and precision
- UV resistant & fully autoclavable
- 5 & 10 ml shaft protected by filter
- Available in 8- & 12-channel version
- Colour coded shafts for easy volume identification

The adjustable ejector height system – to accommodate virtually all brands of tips

Dual volume setting using the pushbutton or the thumbwheel

Soft spring system for smooth, effortless pipetting

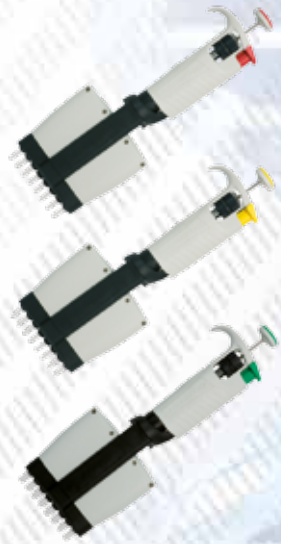
Multichannel LABMATE PRO pipette version feature a revolutionary suspension system which allows the shafts to retract slightly when pressed against a row of pipette tips. Each shaft moves independently, resulting in an even sealing force being applied to all 8 or 12 tips. The suspension system not only ensures secure tip sealing but also eliminates the common incident of tips being jammed. The 360° rotating manifold guarantees optimal working comfort.

Product	Cat. no.	Model	Accessories
LABMATE PRO STARTER 4 PACK	7905	LMP10 LMP20 LMP200 LMP1000	Plexi 4-position stand Tips 10 µl, 96 pcs Tips 200 µl, 96 pcs Tips 1200 µl, 96 pcs Calibration tool x 4 Pipette hanger x 4 Instruction manuals

Model	Cat. no.	Colour code	Volume (µl)	A (%)	P (%)	Fit to tips
LMP2*	5661	●	Min 0.2 1.0 Max 2.0	± 12.0 ± 2.7 ± 1.5	± 6.0 ± 1.3 ± 0.7	10 µl
LMP10	5662	●	Min 0.5 5.0 Max 10.0	± 4.0 ± 1.0 ± 0.5	± 2.8 ± 0.6 ± 0.4	
LMP20	5663	●	Min 2 10 Max 20	± 3.0 ± 1.0 ± 0.8	± 1.5 ± 0.5 ± 0.3	200 µl
LMP50	5667	●	Min 5 25 Max 50	± 2.5 ± 1.0 ± 0.8	± 2.0 ± 0.6 ± 0.4	
LMP100	5664	●	Min 10 50 Max 100	± 1.6 ± 0.8 ± 0.8	± 0.80 ± 0.24 ± 0.20	
LMP200	5665	●	Min 20 100 Max 200	± 1.2 ± 0.8 ± 0.6	± 0.60 ± 0.25 ± 0.20	
LMP250	5660	●	Min 50 125 Max 250	± 1.0 ± 0.8 ± 0.6	± 0.4 ± 0.3 ± 0.3	300 µl
LMP1000	5666	●	Min 100 500 Max 1000	± 1.6 ± 0.7 ± 0.6	± 0.40 ± 0.20 ± 0.15	1000 µl
LMP5000	5668	○	Min 500 2500 Max 5000	± 1.2 ± 0.6 ± 0.5	± 0.5 ± 0.20 ± 0.15	5000 µl
LMP10000	5669	○	Min 1000 5000 Max 10000	± 2.5 ± 0.8 ± 0.5	± 0.6 ± 0.3 ± 0.2	10000 µl

* LMP2 – minimum volume is 0.1 µl.

Model	Cat. no.	Colour code	Volume (µl)	A (%)	P (%)	Fit to tips
LMP8-10 LMP12-10	6281 6285	●	Min 0.5 5 Max 10	± 10 ± 4.0 ± 2.0	± 8.0 ± 2.0 ± 1.2	10 µl
LMP8-50 LMP12-50	6282 6286	●	Min 5 25 Max 50	± 4.0 ± 3.0 ± 1.6	± 2.5 ± 1.2 ± 0.6	200 µl
LMP8-200 LMP12-200	6283 6287	●	Min 20 100 Max 200	± 3.0 ± 1.5 ± 1.0	± 1.5 ± 0.8 ± 0.6	
LMP8-300 LMP12-300	6284 6288	●	Min 50 150 Max 300	± 1.6 ± 1.2 ± 1.0	± 1.5 ± 1.0 ± 0.6	300 µl



5484

Carousel stand

5449

Multiple stand

5480

Plexi 4-position stand

5479

Plexi 1-position stand

OPTIPETTE pipette series

OPTIPETTE pipette series feature slim handle, high accuracy and precision rates combined with their tremendous robustness. Its design provides users with excellent ergonomics & safety.

- Ergonomic handle design
- Easy calibration
- Excellent accuracy & precision
- Soft spring system reducing pipetting forces
- Colour-coded rings for volume identification
- UV resistant body
- Autoclavable lower parts
- Available in 8- &12-channel version

Additional spacers enable ejector height adjustment

Rotating pipetting pushbutton prevents accidental volume change

Calibration key provided with each pipette allows user-calibration

Product	Cat. no.	Model	Accessories
OPTIPETTE STARTER 4 PACK	7902	OP10 OP20 OP200 OP1000	Plexi 4-position stand Tips 10 µl, 96 pcs Tips 200 µl, 96 pcs Tips 1200 µl, 96 pcs Calibration tool x 4 Instruction manuals

Model	Cat. no.	Colour code	Volume (µl)	A (%)	P (%)	Fit to tips
OP2*	5601	●	0.2 1.0 Max 2.0	± 12.0 ± 2.7 ± 1.5	± 6.0 ± 1.3 ± 0.7	10 µl
OP10	5602	●	Min 0.5 5.0 Max 10.0	± 4.0 ± 1.0 ± 0.5	± 2.8 ± 0.6 ± 0.4	
OP20	5603	●	Min 2 10 Max 20	± 3.0 ± 1.0 ± 0.8	± 1.5 ± 0.5 ± 0.3	200 µl
OP50	5607	●	Min 5 25 Max 50	± 2.5 ± 1.0 ± 0.8	± 2.0 ± 0.6 ± 0.4	
OP100	5604	●	Min 10 50 Max 100	± 1.6 ± 0.8 ± 0.8	± 0.80 ± 0.24 ± 0.20	
OP200	5605	●	Min 20 100 Max 200	± 1.2 ± 0.8 ± 0.6	± 0.60 ± 0.25 ± 0.20	
OP250	5600	●	Min 50 125 Max 250	± 1.0 ± 0.8 ± 0.6	± 0.4 ± 0.3 ± 0.3	300 µl
OP1000	5606	●	Min 100 500 Max 1000	± 1.6 ± 0.7 ± 0.6	± 0.40 ± 0.20 ± 0.15	1000 µl
OP5000	5608	○	Min 500 2500 Max 5000	± 1.2 ± 0.6 ± 0.5	± 0.5 ± 0.20 ± 0.15	5000 µl
OP10000	5609	○	Min 1000 5000 Max 10000	± 2.5 ± 0.8 ± 0.5	± 0.6 ± 0.3 ± 0.2	10000 µl

*OP2 – minimum volume is 0.1 µl.

Model	Cat. no.	Colour code	Volume (µl)	A (%)	P (%)	Fit to tips
OP8-10 OP12-10	5141 5145	●	Min 0.5 5 Max 10	± 10 ± 4.0 ± 2.0	± 8.0 ± 2.0 ± 1.2	10 µl
OP8-50 OP12-50	5142 5146	●	Min 5 25 Max 50	± 4.0 ± 3.0 ± 1.6	± 2.5 ± 1.2 ± 0.6	200 µl
OP8-200 OP12-200	5143 5147	●	Min 20 100 Max 200	± 3.0 ± 1.5 ± 1.0	± 1.5 ± 0.8 ± 0.6	
OP8-300 OP12-300	5144 5148	●	Min 50 150 Max 300	± 1.6 ± 1.2 ± 1.0	± 1.5 ± 1.0 ± 0.6	300 µl

5484

Carousel stand

5449

Multiple stand

5480

Plexi 4-position stand

5479

Plexi 1-position stand

CLINIPET+ pipette series

CLINIPET+ fixed volume pipettes are available in 33 models from 2 µl up to 1000 µl. The handle and mechanism have been especially designed for fixed volume pipettes. The pipette features reduced pipetting forces and excellent accuracy and precision combined with highly durable, UV resistant and fully autoclavable body.

- Recalibration system allows for quick and accurate pipettes calibration

- Low pipetting forces prevent RSI
- Highly durable, made from PVDF shafts guarantee highest mechanical and chemical resistance

- Unique tip sealing system

Sliding tip ejector button – perfect for right & left handed people. Its unique construction reduces tip ejection forces

Easy removable tip ejector allows working with narrow tubes

Model	Cat. no.	Colour code	Volume (µl)	A (%)	P (%)	Fit to tips
CP2*	2202		2	± 3.0	± 1.5	
CP5	2204		5	± 2.0	± 1.0	
CP7*	2206		7	± 1.5	± 0.7	
CP10	2208		10	± 1.2	± 0.5	
CP15*	2210		15	± 1.0	± 0.5	
CP20	2212		20	± 0.9	± 0.4	
CP25	2214		25	± 0.9	± 0.4	
CP30*	2216		30	± 0.9	± 0.3	
CP40*	2218		40	± 0.9	± 0.3	
CP44.7*	2220		44.7	± 0.9	± 0.3	
CP50	2222	●	50	± 0.9	± 0.3	200 µl
CP60*	2224		60	± 0.9	± 0.3	
CP70*	2226		70	± 0.9	± 0.3	
CP75*	2228		75	± 0.9	± 0.3	
CP80*	2230		80	± 0.9	± 0.3	
CP90*	2232		90	± 0.8	± 0.3	
CP100	2234		100	± 0.8	± 0.3	
CP120*	2236		120	± 0.8	± 0.3	
CP150*	2238		150	± 0.7	± 0.3	
CP200	2240		200	± 0.6	± 0.2	
CP200A*	2242		200	± 0.6	± 0.2	
CP220*	2244		220	± 0.6	± 0.2	
CP250	2246		250	± 0.6	± 0.2	
CP300	2248		300	± 0.6	± 0.2	
CP400*	2250		400	± 0.6	± 0.2	
CP450*	2252		450	± 0.6	± 0.2	
CP500	2254	●	500	± 0.6	± 0.2	1000 µl
CP600*	2256		600	± 0.6	± 0.2	
CP700*	2258		700	± 0.6	± 0.2	
CP750*	2260		750	± 0.6	± 0.2	
CP800*	2262		800	± 0.6	± 0.2	
CP900*	2264		900	± 0.6	± 0.2	
CP1000	2266		1000	± 0.6	± 0.2	

*Special versions upon request

5484

Carousel stand

5449

Multiple stand

5480

Plexi 4-position stand

19451

Pipette hanger

Pipette tips - standard & filtered

Pipette tips are integral components of the pipetting system. Their shape, material properties and purity have influence on pipetting results. HTL pipette tips are manufactured from the virgin polypropylene in clean room conditions and are certified to be free from bio-contaminants. HTL offer includes standard, sterile and filtered version in all popular packaging formats:

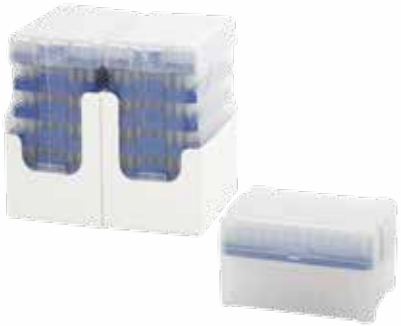
Types of packing:

Bulks
Pipette tips available in bulks – resealable plastic bags – keeping them safe from contamination. One bulk contains 200, 250 or 1000 pieces of tips depending on the tip volume.

Racks
Tips racked in durable polypropylene box providing good stability on the lab bench. One rack contains 96 or 100 pieces of tips depending on the tip volume.

Stack racks
Stack racks secure the tips and save valuable space. One stack rack contains 5 trays with 96 tips. Available only for 10 µl and 200 µl tips. Can be used to refill standard racks.

Refill system
One refill contains 10 trays with 96 tips each plus an empty rack box. Available only for 10 µl and 200 µl tips with graduation marks.



- Perfect fitting and sealing with HTL pipettes secures the best possible accuracy and precision
- Compatible with most other pipettes on the market
- Strict quality standards, ISO 9001, followed from R&D to production and delivery
- The highest quality virgin polypropylene used as raw material
- Sterilisation can be performed using autoclave (121°C, 100kPa, 15 minutes, w/o dry cycle)

Volume of the tip (µl)	Pipette volume range	Cat. no.	Sterile	Packaging
0.5 - 10 short	0.1 - 2 0.5 - 10	30011	no	1000 tips / bag
		30012	no	96 tips / box x 10 boxes
		30013	yes	96 tips / box x 10 boxes
		30014	no	5 trays of 96 tips in a stack
		30015	no	10 removable trays of 96 tips*
0.5 - 10 extended	0.1 - 2 0.5 - 10	34011	no	1000 tips / bag
		34012	no	96 tips / box x 10
		34013	yes	96 tips / box x 10
1 - 200 without graduation marks	2 - 20 5 - 50 10 - 100 20 - 200	30201	no	1000 tips / bag
		30202	no	96 tips / box x 10
		30203	yes	96 tips / box x 10
1 - 200 graduation marks at 10, 50 and 100 µl	2 - 20 5 - 50 10 - 100 20 - 200	30221	no	1000 tips / bag
		30222	no	96 tips / box x 10
		30223	yes	96 tips / box x 10
		30224	no	5 trays of 96 tips in a stack
		30225	no	10 removable trays of 96 tips*
1 - 300 fine-point	50 - 250 50 - 300	30301	no	1000 tips / bag
		30302	no	96 tips / box x 10
		30303	yes	96 tips / box x 10
100 - 1000 bevelled	100 - 1000	31001	no	1000 tips / bag
		31002	no	100 tips / box x 10
		31003	yes	100 tips / box x 10
100 - 1200 bevelled	100 - 1000	31201	no	1000 tips / bag
		31202	no	96 tips / box x 12
1000 - 5000 macrovolume	1000 - 5000	35001	no	250 tips / bag
1000 - 10000 macrovolume	1000 - 10000	36001	no	200 tips / bag

* Refill contains 10 trays with tips plus 2 racks

Filter tips

Volume of the tip (µl)	Pipette volume range	Cat. no.	Sterile	Packaging
0.5 - 10 short	0.1 - 2 0.5 - 10	30016	yes	96 tips / box x 10
0.5 - 10 extended	0.1 - 2 0.5 - 10	34016	yes	96 tips / box x 10
0.5 - 20 graduation marks	2 - 20	30026	yes	96 tips / box x 10
0.5 - 50 graduation marks	5 - 50	30056	yes	96 tips / box x 10
1 - 100 graduation marks	10 - 100	30106	yes	96 tips / box x 10
1 - 200 graduation marks	20 - 200	30206	yes	96 tips / box x 10
1 - 300 fine-point	50 - 250 50 - 300	30306	yes	96 tips / box x 10
100 - 1000 bevelled	100 - 1000	31006	yes	100 tips / box x 10
100 - 1100 bevelled	100 - 1000	31206	yes	96 tips / box x 12

Pipette stands & accessories

HTL offers a wide range of high quality accessories for pipette storage, protection and identification.

Product	Cat. no.	For pipettes	
Carousel stand	5484	Single channel pipettes: D/DV2-D/DV1000, LMP2-LMP1000 OP2-OP1000, CP	
Multiple stand	5449	Single and multichannel pipettes: DP, D/DV, LMP, OP, CP	
Plexi 1-position stand	5479	Single and multichannel pipettes: DP, D/DV, LMP, OP, CP	
Plexi 4-position stand	5480	Single and multichannel pipettes: DP, D/DV, LMP, OP, CP	
Pipette hanger	19483	Single and multichannel pipettes: DP, LMP, OP	
Pipette hanger	19451	Single and multichannel pipettes: D/DV, CP	
Colour-coded rings (only for pipettes 2 – 1000µl)	19630	Single channel pipettes: D/DV, LMP, OP	
Protective filter for pipettes 5 and 10 ml set of 50 pcs	19477	Single channel pipettes: D/DV, LMP, OP	

HTL Service

HTL is committed to providing our customers with innovative, high-quality products, factory-authorized repair and calibration services. All HTL products are designed and operate under ISO 8655 standard. Each pipette is calibrated and delivered with a unique individual certificate of accuracy and precision to guarantee the standard.

Calibration and pipette service

HTL Liquid Handling products are very precise measurement devices and they may be subject to various unnoticed improper interactions, even under ideal laboratory conditions. It is strongly recommended for the laboratory equipment to be inspected and maintained at least once a year by authorized service. This will ensure its correct and precise work during the life of the product. HTL offers services including maintenance, calibration and repairs. All available to a wide range of HTL products manufactured at present and in the past.

Procedure \ Service*	Basic calibration	Advanced calibration	Repair	Additional description of the procedure
Preliminary assessment of the product	+	+	+	Mechanical work, leaks
Cleaning / Decontamination	+	+	+	The customer is obliged to provide a Decontamination Form with the product
Disassembling and checking	+	+	+	Evaluation of the parts wear
Sealing parts replacement	*	+	+	Replacement of parts which are the subject of wear
Parts lubrication	+	+	+	Cleansing and moisturizing the piston surface
Replacement of the damaged parts			+	Based on evaluation
Pipettes modernization		**	**	Installation of the most up-to-date parts
2-point calibration	+		+	Gravimetric test based to ISO 8655
3-point calibration		+	**	Gravimetric test according to ISO 8655

* above information applicable for HTL factory service unit; depending on the region selected an alternative services may be offered - please contact your distributor for details
PZ HTL S.A. reserves the right to change the offer without prior notice.
** if required / requested by the user

Pipette maintenance

HTL pipette design provides the highest work standard. The combination of the high quality product and a regular maintenance and calibration is your guarantee of long and reliable operation. To ensure a troublefree maintenace, every pipette is supported with a set of accessories, including a calibration key and a piston lubricant. All necesary maintenace instructions can be found in the user manual, for more detailed information please check our website www.htl.com.pl.

SWIFTPET PRO pipette controller

Pipetting using glass and plastic volumetric pipettes has never been so easy as with SWIFTPET PRO pipette controller. Ergonomically shaped handle, together with well-located, smooth pushbuttons and switches guarantee effortless pipetting even during extensive use. Convenient charging stand helps to store the pipette controller while not in use. Easily accessible switches on the SWIFTPET PRO allow choosing different operation modes depending on the volume of pipette and viscosity of liquid. The SWIFTPET PRO is an excellent tool for pipetting in tissue culture laboratories, water treatment facilities, academic labs, and more.

Safe and efficient work

- Protected by a PTFE filter blocking any liquid from entering the unit
- Autoclavable filter, the pipette holder and the nosepiece
- UV resistant body for safe sterilization
- Powerful, environmentally friendly 3 Ni-MH batteries enable many hours of continuous work
- LCD display showing battery charge level

Speed and working mode adjustment

- Function buttons for SPEED and working MODE control in a reach of a thumb
- Additional speed adjustment by the pressure applied to the trigger buttons

Working comfort

- Suitable for glass & plastic volumetric pipettes 0.5-100 ml
- Ergonomically shaped handle
- Well located function buttons
- Convenient charging stand for bench/wall mounting
- Easy access to the batteries

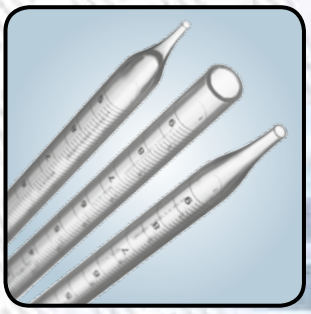
UV resistant CE

Product	Cat. no.
SWIFTPET PRO with charging stand	0390
Charging stand	29056
Pipette holder	29054
Nosepiece	29053
Standard battery cover	29063
„Wings" battery cover	29064
Micro filter 0.20 µm	9023
Micro filter 0.45 µm	9024
Universal charger 9V type: EU, US, UK, AU	9010
Hanger	9029

Serological pipettes

Designed for easy and accurate dispensing, polystyrene HTL serological pipettes are perfect for a wide range of applications. Bold clear graduation with easy to read numbers guarantees best tests results possible and the negative graduations increase pipette capacity. Colour coded plug helps identify nominal volume. All pipettes are free from bio contaminants and the sterile version offers sterility assurance level SAL of 10^{-3}.

Pipette type	Description	Plug colour	Vol. (ml)	Packaging format	Cat. no.	Sterile
Standard tip	General applications: tissue culture, microbiology	yellow	1	1	41011	yes
				25	41012	yes
		green	2	1	41021	yes
				25	41022	yes
		blue	5	1	41031	yes
				25	41032	yes
		orange	10	1	41041	yes
				25	41042	yes
		red	25	1	41051	yes
				10	41050	yes
		maroon	50	1	41061	yes
Short (220 mm)	For applications under hoods	blue	5	1	42031	yes
		orange	10	1	42041	yes
Wide tip	For viscous solutions, food testing and life science applications	blue	5	1	43031	yes
				25	43032	yes
		orange	10	1	43041	yes
				25	43042	yes
Open end	For very viscous solutions & suspensions	yellow	1	1	44011	yes
				25	44012	yes
		green	2	25	44022	yes
		blue	5	1	44031	yes
		orange	10	1	44041	yes
				25	44042	yes
Aspiration	Non plugged,non graduated for aspirating liquids using vacuum suction	no	2	1	46021	yes
Standard tip	Economic for all non- sterile applications	no	1	Bag	47013	no
			2		47023	no
			5		47033	no
			10		47043	no
			25		47053	no



MINILAB 201 repetitive dispenser & syringes

MINILAB 201 dispenser was engineered to revolutionize repetitive pipetting work. Its positive displacement principle guarantees superior accuracy and precision of the dispenser, no matter how dense or viscid substances are dispensed. Its precise stepping mechanism ensures repeatability of dispensed doses. The MINILAB 201 dispenser offers as many as 48 dispensing steps from single syringe filling. Samples can be dosed at intervals as fast as one second. Disposable syringes applied in the MINILAB 201 dispenser prevent dispensing samples cross – contamination and speed up repetitive pipetting work.

Easy long series dispensing

- Lightweight – 100 g
- Maintenance free
- Ideal for viscous solutions
- Compatible with most syringes available on the market
- Supplied with adapter for 25 ml and 50 ml syringes

Syringes

The MINILAB 201 dispenser works with eight sizes of disposable, pure polypropylene syringes from 0,05 ml to 50 ml. HTL syringes provide most accurate pipetting when used with the MINILAB 201 dispenser. Each syringe is marked to indicate the total capacity and the repetitive volumes it can dispense. Volumes from 1 µl to 5 ml can be dispensed, depending upon the volume selected.

Syringe selection is shown in the table below:

Dial setting	1	2	3	4	5	A%	P%
Number of doses	48	23	15	11	8		
Syringe volume* (ml)	Sample volume (µl)						
0.05	1	2	3	4	5	± 6.0	± 9.0
0.50	10	20	30	40	50	± 1.0	± 1.5
1.25	25	50	75	100	125	± 0.9	± 0.9
2.50	50	100	150	200	250	± 0.7	± 0.9
5.0	100	200	300	400	500	± 0.3	±0.8
12.50	250	500	750	1000	1250	± 0.3	± 0.7
25.00	500	1000	1500	2000	2500	± 0.5	± 0.6
50.00	1000	2000	3000	4000	5000	± 0.5	± 0.6

*Please use the syringe 0.05 ml with an attached pipette tip (10 µl). Values for a syringe 0.5ml, 1.25 ml and 2.5 ml were measured with an attached 200 µl pipette tip, values for a syringe 0.05 ml were measured with an attached 10 µl pipette tip.

Product	Cat. no.
MINILAB 201 with adapter for 25 and 50 ml syringes	0020
Adapter for syringes 25 and 50 ml	5709
Plexi 1-position stand	5479

The syringes are compatible with dispensers**:
- ripette®
- Multipette® 4780
- Minilab 100/101
- Distriman® - EasyStep
- HandyStep®
- HandyStep® electronic

Syringe	Cat. no. Non Sterile	Cat. no. Sterile	Pcs / pack
0.05 ml	5701	-	100
0.50 ml	5702	5752	100
1.25 ml	5703	5753	100
2.50 ml	5704	5754	100
5.00 ml	5705	5755	100
12.50 ml	5706	5756	100
25.00 ml	5707	5757	25
50.00 ml	5708	5758	25

** Multipette® is a registered trademark of Eppendorf AG;
HandyStep® is a registered trademark of Brand GmbH + Co. KG;
Distriman® is a registered trademark of Gilson Inc.; ripette® is a registered trademark of Ritter Medical Care

MINI CENTRIFUGE

HTL MINI CENTRIFUGE is designed and dedicated to a wide range of applications in medical, veterinary, biochemical and other laboratories where constituents of investigated materials are to be separated under the effect of centrifugal force. The product is supplied with rotors and adapters to accommodate 1.5 ml, 0.5 ml and 0.4 ml tubes as well as 0.2 ml strips and individual tubes. The standard and strip rotors are easily interchanged.

- Easy to operate – a switch on the side of the centrifuge starts and stops the operation
- Compact design with low weight
- Supplied with both standard microtube and strip tube rotors
- Rubber support keeps the centrifuge in its place during work
- Translucent lid enables work observation

Parameters:

- Maximum capacity: 6 x 1.5/2.0 ml
- Maximum speed: 6000 rpm
- RFC: 2000 x g
- Dimensions: 153 x 153 x 102 mm
- Weight: 450 g

Accessories included in the box:

Product	Cat. no.
HTL MINI CENTRIFUGE	8000
Rotor for 6 x 1.5/2.0 ml tubes	9101
Rotor for 0.2 ml strip tubes	9102
Adapters for 0.5/0.6 ml tubes	9103
Adapters for 0.4/0.25 ml tubes	9104

PIPETTE SERIES COMPARISON BY PRODUCT FEATURE

Surprisingly, the purchase of an automatic pipette is not a simple task. When you make the choice you should consider both parameters, as well as the skills of the pipette user. For example, in research, where precision is particularly important, it is the 4-digit counter and volume lock that would really matter. But for people who are just learning to work with a pipette it would be important to use a pipette with perceptible pipetting stops to minimize the risk of error.
The following table compares the features of all the variable volume pipettes currently offered by HTL:

Pipette series / Feature	OPTIPETTE	LABMATE pro	DISCOVERY Comfort	DISCOVERY PRO
Volume range (µl) for single channel models	0.1-10000	0.1-10000	0.1-10000	0.1-1000
Volume range (µl) for multichannel models	0.5-300	0.5-300	1-300	1-300
Counter type	3-digits	3-digits	3-digits	4-digits
Pipetting forces	Well perceptible pipetting stops	Lowered pipetting forces, soft spring system	Lowered pipetting forces, soft spring system	Ultra low pipetting forces
Autoclavability	Lower parts	Fully	Fully	Fully
UV resistance	Yes	Yes	Yes	Yes
User calibration	Yes	Yes	Yes	Yes
Volume setting system	Volume setting knob	Volume setting knob or pipetting pushbutton	Volume setting knob or pipetting pushbutton	Volume setting knob
Volume lock	No	No	Yes	Yes
Tip ejector height adjustment	Yes, additional spacers	Yes, „click-to-fix" system	Yes, „click-to-fix" system	No, long ejector stroke
Universal shafts	Yes	Yes	Yes	Yes
Thermal insulation	No	No	No	Yes
Colour coding	Yes, identification rings	Yes, pipetting pushbuttons & shafts	Yes, pipetting pushbuttons &/or shafts	Yes, ejector pushbutton cap & calibration switch
Filters in 0.5-5 & 1-10 ml model	Yes	Yes	Yes	N/A
Starter sets	OPTIPETTE STARTER 4 PACK	LABMATE PRO STARTER 4 PACK	DISCOVERY COMFORT STARTER 4 PACK DISCOVERY STARTER KIT DISCOVERY STARTER KIT BIO	DISCOVERY PRO STARTER 4 PACK

GOOD PIPETTING PRACTICE

Achieving reliable results when pipetting, depends largely on users skills. Errors resulting from poor pipetting techniques can significantly affect test results, as proper pipetting plays an important role in achieving accurate and repeatable measurements. Here are some tips on how to pipette properly:

1 Select the pipetting technique

There are two pipetting techniques: standard pipetting for pipetting of water, aqueous solutions, buffers, diluted acids and bases, and reverse pipetting for liquids of high density and viscosity as well for these easy foaming.

2 Pay attention to the environmental conditions

The volume of liquid measured using a pipette varies with the temperature, thus the room temperature during pipetting, the pipette tip and the liquid should be constant in the range 20-25 °C.

3 Store the pipette on the stand

Warmth of the hand during pipetting can have an impact on the thermal equilibrium and consequently influence the volume of sample dispensed, thus do not hold the pipette continuously in your hand between pipetting cycles.
After pipetting, always put the pipette back on its stand.

4 Use the right tip

The tip should be flexible, thin-walled and seal well on the pipette shaft. The use of inadequate quality tips may result in an error up to 10%!

5 Always rinse the tip

Rinsing is based on single or double aspiration and dispensing of liquid into the same container. It is especially important when pipetting volatile, dense or viscous liquids or its temperature is different than ambient temperature.

6 Hold the pipette vertically when aspirating the liquid

7 Immerse the tip into the liquid correctly

Tip immersion depth depends on the volume range of the pipette in use:

Pipette volume range (µl)	Tip immersion depth (mm)
2-20	≤1
20-100	2-3
200-1000	2-4
5000	3-6
10000	5-7

8 Operate the pipetting button slowly and smoothly, after aspirating wait 1 second before removing the tip from the liquid

Rapid aspiration can result in liquid entering inside the pipette shaft or formation of air bubbles in the tip. Gently pull out the tip from the liquid to prevent the residual liquid remain on the outer tip surface.

9 Change the tip

Always change the tip for the new one when changing dispensed liquid or if visible liquid droplets remained inside the tip. Applying the same tip repeatedly may result in an error of approx. 4%!

10 Clean your pipette regularly and often check its calibration

Send the pipette for servicing if needed.

Troubleshooting

Is your product not operating properly? Did you know that in many cases the issue can be solved by yourself? Remember! Always follow the user manual during any maintenance or repair work. Depending on the nature of the problem you may find the adequate information in chapters:

RECOMMENDATIONS | TROUBLESHOOTING | CLEANING AND STERILISATION

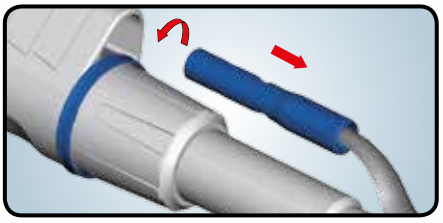
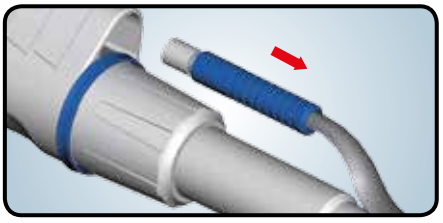
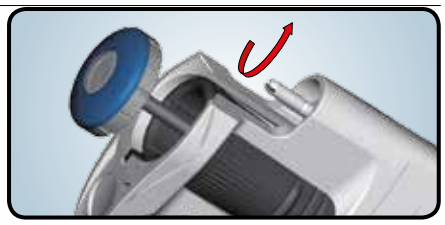
Looking for more information? Visit our website where you will find all needed manuals and other instructions referring to product use and maintenance – **www.htl.com.pl**, *Customer Care tab*.

1. Liquid aspiration/dispensing – the tightness of the pipette

Description	Possible cause	Solution
Liquid aspiration not possible / possible at reduced speed	Contamination inside the shaft (shaft opening blocked)	1 – remove the shaft, clean or replace 2 – check the condition of piston and sealing parts
	Contaminated shaft filter (models 5ml and 10ml)	Replace for new
Liquid aspiration not possible / Amount of aspirated liquid incorrect (low) / liquid leaking out of the tip	Incomplete or improperly fixed sealing parts	1 – remove the shaft, check condition of the parts (replace damaged items) 2 – fix the parts in order, following the user manual*
	Damaged or stained shaft (tip sealing surface)	Clean the shaft or replace for new

*Detailed description of the assemble procedure can be found at www.htl.com.pl in the *Customer Care/HTL pipette maintenance* tab

2. Tip ejector removing and adjustment

Pipette model	Operation principle	
Discovery Comfort, **Labmate Pro** (models 2µl to 1000µl) with *'click-to-fix'* tip ejector	Twist the colourr ejector bush to the left by 1/3 of a turn. Ejector can be released after a 'click'	
Tip ejector height adjustment	When ejector button is removed, twist the colour bush to the left - to increase / to the right - to decrease the length of tip ejector	
Optipette, older models of the Discovery and Labmate (models 2µl to 1000µl) with 'push-in' tip ejector	Press the ejector button and pull down the tip ejector by the ejector (grey or colour) bush	
Tip ejector height adjustment	When tip ejector is removed, take off the spacer or replace with other (2 sizes available)	
Macro pipettes – all pipette lines (models 5000µl and 10000µl) with 'screw-in' tip ejector	When ejector button is removed, turn the arbor (using the screwdriver) to the left until ejector is released	
Tip ejector height adjustment (increasing the length only)	a) when ejector button is removed, turn the arbor to the left to increase the length of tip ejector b) use a tip ejector cap	
Discovery Pro with 'screw-in' tip ejector No height adjustment	Unscrew the lower part of the pipette. Hold the shaft nut and unscrew the tip ejector.	

More information in the *Customer Care/Troubleshooting* tab

Notes

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